Technics
by Panasonic

QUARTZ
Direct Drive Automatic Turntable System

SL-1311

Operating instructions

Before operating this set, please read these instructions completely.

We want to thank you for selecting the SL-1311.
For optimum performance, we recommended that you read these instructions carefully.
This operating instructions are commonly applicable to units of different colors.

Parts identification

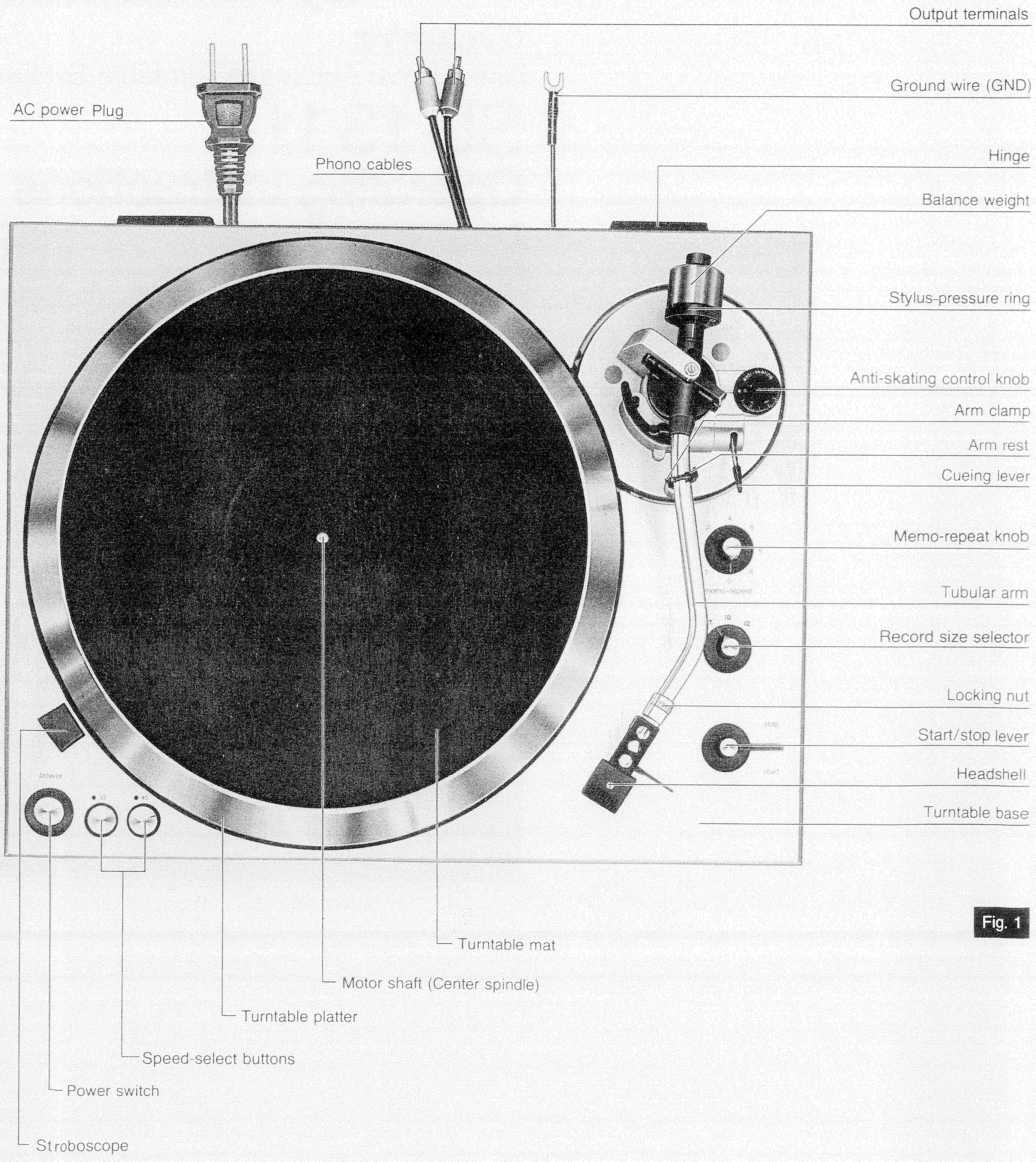
Output terminals
Ground wire (GND)
AC power Plug
Phono cables
Hinge
Balance weight
Stylus-pressure ring
Anti-skating control knob
Arm clamp
Arm rest
Cueing lever
Memo-repeat knob
Tubular arm
Record size selector
Locking nut
Start/stop lever
Headshell
Turntable base
Turntable mat
Motor shaft (Center spindle)
Turntable platter
Speed-select buttons
Power switch
Stroboscope

Fig. 1

"Warning: To prevent fire or shock hazard, do not expose this appliance to rain or moisture."

Before use

Caution:
Never connect the AC power plug before assembly has been completed.
Attach the dust cover last, so that assembly and adjustments can be made most conveniently.

❶ Checklist of parts.

Turntable unit	1
Turntable platter	1
Turntable mat	1
Dust cover	1
45-rpm adaptor	1
Balance weight	1
Headshell	1

❷ Remove the transport spacers.

Remove the 4 spacers used for transporting.
The sequence for removal is ①–④. **(See Fig. 2.)**
Save the removed spacers for transporting the unit again.

(This will prevent damage due to shock and vibration.)

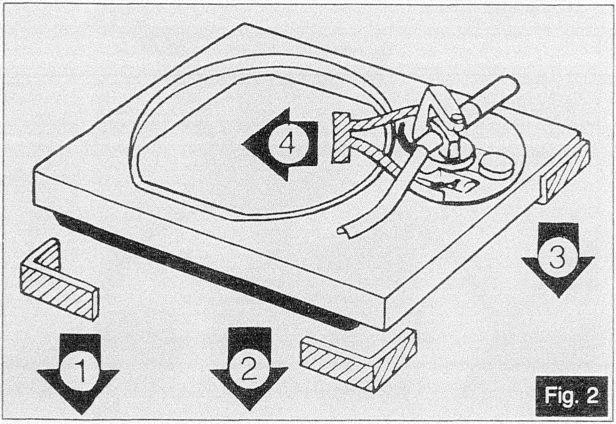

Fig. 2

❸ Power supply

- Make sure that the AC line-voltage selector is corrected to your local voltage before connecting the plug to the AC socket. If your local voltage is different, please turn the AC line-voltage selector with a screwdriver to your local voltage. **(See Fig. 3.)**
- DC power cannot be used.
- This equipment should be disconnected from the mains when not in use.
  The AC line voltage selector is found under the turntable platter.

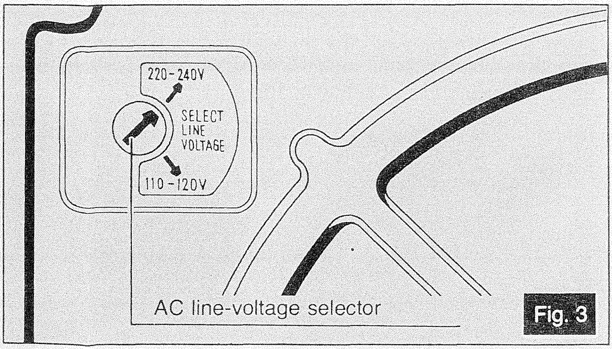

Fig. 3

Assembly and set-up

❶ Installation of the turntable platter

1. Place the turntable platter on the motor shaft.

   Note:
   - The rotor is connected to the underside of the turntable platter. (The magnet of the motor is attached to the turntable platter.) To maintain optimum performance, extra care should be taken to prevent adhesion of dust or iron filings to the magnet and not to damage the magnet by dropping it.
   - Do not remove or loosen the screws **(See Fig. 4.)** Should the position of the fixed magnet be altered by loosening the securing screws, the rated performance of the unit cannot be guranteed.
2. Place the turntable mat on the platter.

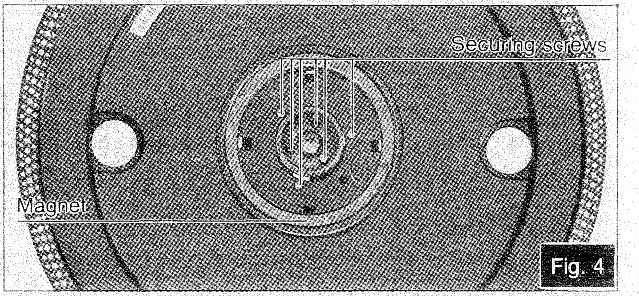

Fig. 4

❷ Installation of the headshell/cartridge assembly

Insert the headshell/cartridge assembly into the front end of the tubular arm, and turn the locking nut clockwise (in the direction shown by the arrow "**A**"), with the headshell/cartridge assembly firmly held horizontally. **(See Fig. 5.)**

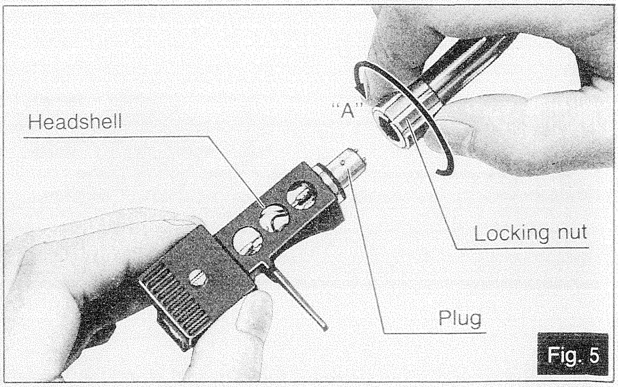

Fig. 5

❸ Installation of the balance weight

Place the balance weight on the rear shaft of the tonearm. **(See Fig. 6.)**

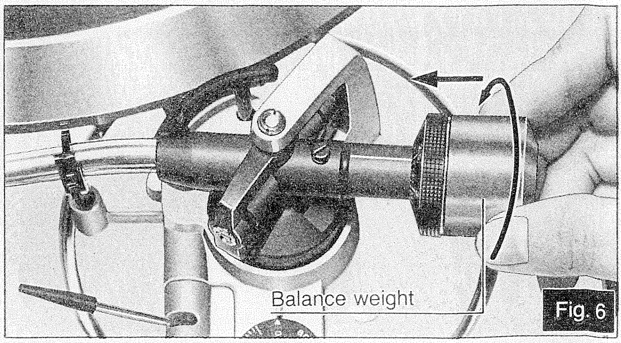

Fig. 6

❹ Adjustments of horizontal "0" balance and stylus pressure

1. Remove the stylus protector, if your cartridge has a detachable one. Be careful not to touch your fingers to the stylus tip.
2. Release the arm clamp and lift the tonearm from the arm rest to free it.
3. Turn the entire balance weight clockwise (indicated by the arrow "**A**") or counterclockwise (indicated by the arrow "**B**") until the tonearm is approximately balanced horizontally (floats freely).
   (See Figs. 7 and 8.)

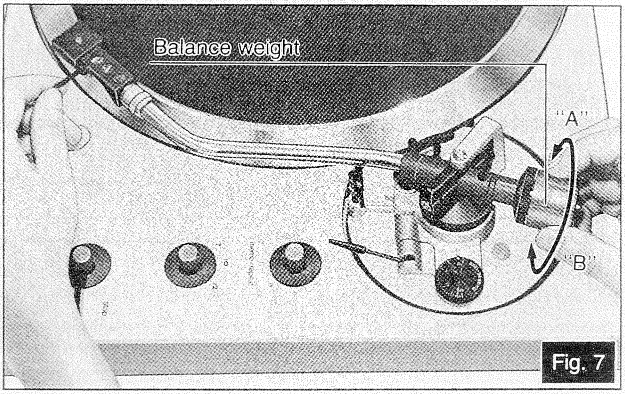

Fig. 7

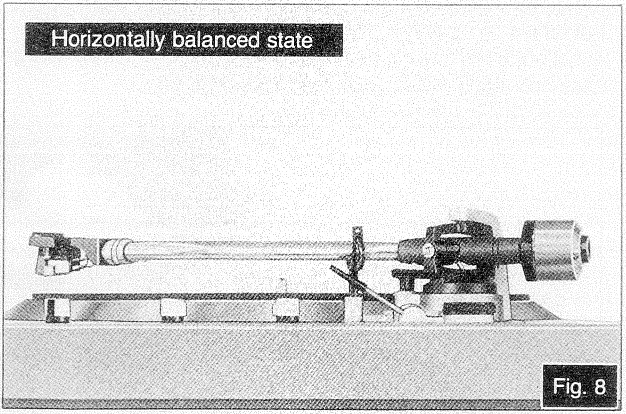

Fig. 8

Note:

- If the tonearm pulls toward the arm rest when the tonearm is held in a free state as in the picture, rotate the turntable platter clockwise about 10 times.
- This will disengage the automatic mechanism from the tonearm gear, which in rare cases may have moved out of its normal position during transportation.
- During the adjustment of the horizontal "**0**" balance, be careful that the stylus tip of the cartridge does not contact the turntable mat or turntable base.

4. After the tonearm is horizontally "**0**" balanced, temporarily fasten the tonearm with the arm clamp.
5. Hold the balance weight stationary with one hand as shown in the picture and rotate only the stylus-pressure ring to bring the numeral "**0**" of the ring into alignment with the center line of the tonearm rear shaft. The adjustment of the horizontal "**0**" balance is now completed. **(See Fig. 9.)**

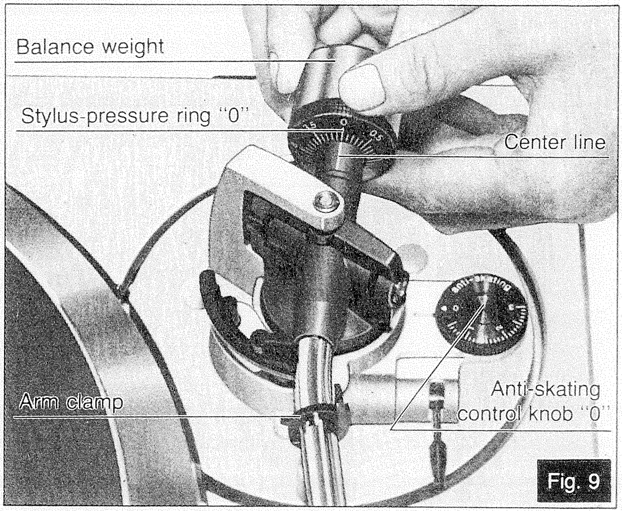

Fig. 9

6. After adjusting the horizontal "0" balance, turn the balance weight clockwise in the direction of the arrow and align to the correct stylus pressure.
   (Follow the cartridge manufacturer's recommendation.)
   (See Fig. 10.)

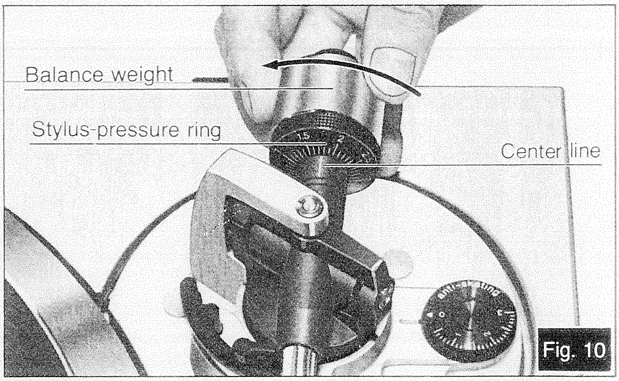

Fig. 10

- As the stylus-pressure ring moves in step with the balance weight, proper stylus pressure can be selected by directly reading the graduated ring.

  Note:

  Set the stylus pressure to the maximum recommended value for your cartridge in cases where the record has an extremely high recording level, or where the unit is operated in a room at low temperature or in places in which the unit is subjected to vibrations.

❺ Adjustment of the anti-skating control

Set the anti-skating control knob to the same value as the stylus pressure. **(See Fig. 11.)**

Note:

- When a cartridge with integral dust brush is used, follow the cartridge manufacturer's recommendation for adjusting both stylus pressure and anti-skating force.

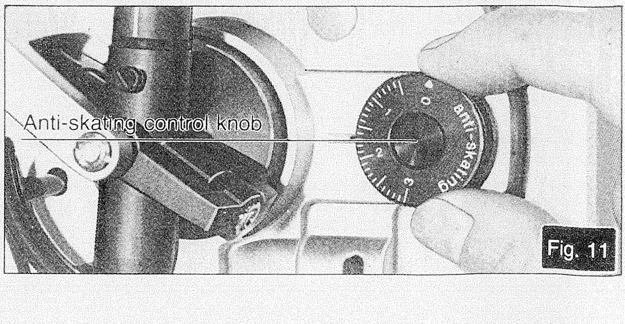

Fig. 11

❻Installation of the dust cover

Place the dust cover into position from directly above, holding it at both sides. For detaching the dust cover, be certain first to raise it as illustrated before removal. **(See Fig. 12.)**

Note:

- Opening or closing of the dust cover during play should be avoided. This may not only cause undesired vibrations, but also result in skipping of the stylus.
- If you must open the dust cover during play, do so as gently as possible.

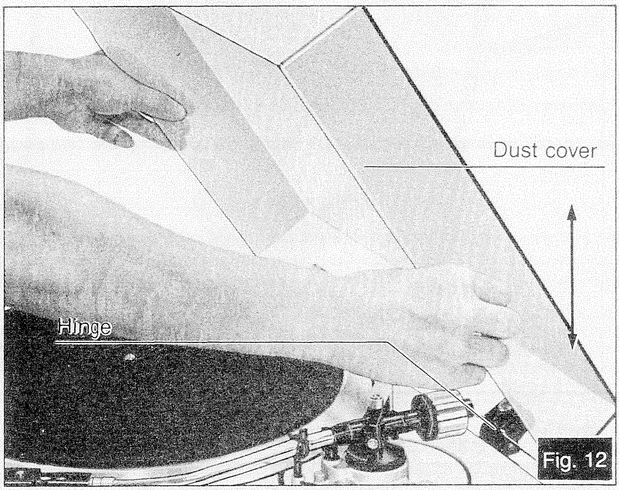

Fig. 12

❼Placement

1. Place the unit in a stable and horizontal position, where there is little or no vibration.
   The unit has the superior feature of double-isolator construction.
   For obtaining the maximum effect of this feature, place the unit in a stable, level place. In addition, be careful not to put anything under the turntable base.
2. Locate the unit as far away from the speakers as possible and isolate the unit from sound radiation from them.
3. Do not place the unit where it is exposed to direct sun, dust, moisture or heat.
4. Keep it in a well ventilated place.

❽Connections

1. **Connect the AC power plug.**
   Connect the AC power plug to an AC socket.
2. **Connect the output terminals.**

Output terminals	**Amplifier or Receiver**
L (White) →	L Channel
R (Red) →	R Channel
GND (Spade lug) →	GND

Note:

Be sure to connect the ground terminal firmly to the amplifier or receiver. If this connection is not made or is loose, a power source "HUM" will result.

How to operate

■ Manual Play

①**Place a record on the turntable mat.**

②**Push the power switch in the ON position (▬).**

Both the LED at the speed selector 33 (33⅓ rpm) and the stroboscope should be illuminated.

Note:

- Since the unit has been designed to select 33⅓ rpm automatically each time you push the power switch to ON, push the 45 rpm speed-select button if you play 45-rpm records.
- The strobe dots in the middle are synchronized to the precise frequency of the quartz crystal, while the strobe dots on either side are arranged for motion in the plus and minus directions, for identification of turntable speed at a glance.

③**Remove the stylus protector, if your cartridge has a detachable one.**

④**Release the arm clamp.**

⑤**Lift the cueing lever.**

⑥**Move the tonearm over the desired groove.**

The turntable platter will start to rotate.

⑦**Lower the cueing lever.**

The tonearm will descend slowly onto the record and play will begin.

⑧**When play has finished, the tonearm will automatically return to the arm rest (auto-return) and the turntable platter will stop rotation.**

Note:

After play is completed, fasten the tonearm with the arm clamp and push the power switch to the OFF position (■).

■ When you play a 45-rpm record with a large center hole

Place the 45-rpm adaptor on the motor shaft. Push the 45 rpm speed-select button.

■ How to suspend play

Lift the cueing lever.

The stylus tip of the cartridge will be lifted from the record.

■ How to stop play

Push the start/stop lever.

The tonearm will automatically return to the arm rest and the turntable will stop rotating.

Automatic play

①**Place a record on the turntable mat.**

②**Set the record size selector to the diameter of the record you wish to play.** (See Fig. 13.)

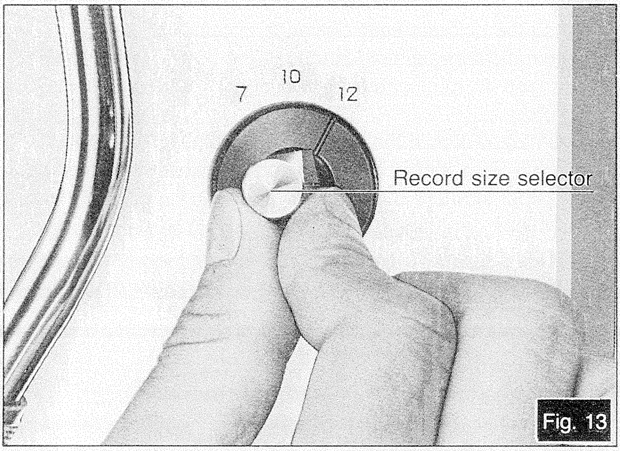

Fig. 13

③**Push the power switch to the ON position (▬).**

④**Remove the stylus protector.**

⑤**Release the arm clamp.**

⑥**Pull the start/stop lever to the "Start" position.** (See Fig. 14.)

The tonearm will move according to the size of the record set and will start to play (automatic start).

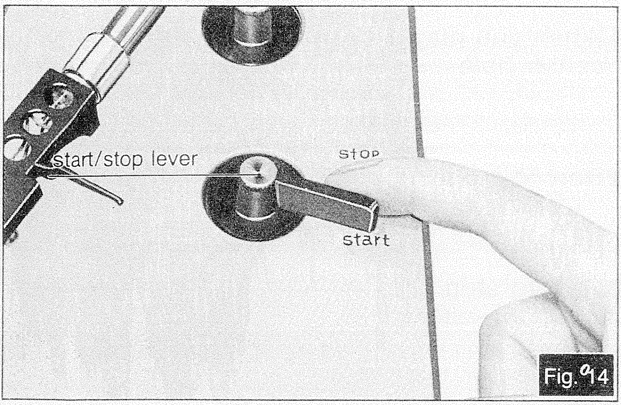

Fig. 14

⑦**When finished play, the tonearm will automatically return to the arm rest and the turntable platter will stop rotation.**

Note:

Records with dimensions other than 7" (17 cm), 10" (25 cm) and 12" (30 cm) diameter must be played "Manually."

Repeat play

You can play a record repeatedly from one to six times or continuously by setting this knob to the desired position.

Set the "memo-repeat" knob to the desired number you wish to play. (See Fig. 15.)

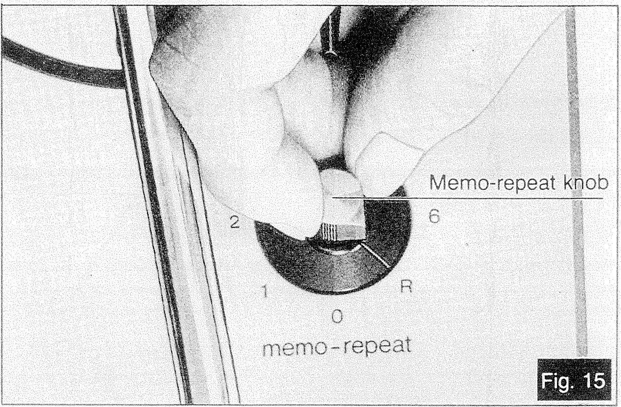

Fig. 15

Note:

For suspension of play, be sure to push the start/stop lever after having set the "**memo-repeat**" knob to "**0**".

"R" position enables you to repeat play continuously.

Notes and Maintenance

❶ Extra care should be taken in handling the turntable platter.
The turntable platter has a rotor (the magnet of the motor) directly connected to it. Therefore, the turntable platter should not be removed from the motor shaft unnecessarily. Should it become necessary to remove the turntable platter, be sure first to pull the AC power plug out of the socket.

❷ Wipe the dust cover and turntable base with a soft, dry cloth.

- Never use any cleaners containing alcohol, benzine or thinner.
- Use of a chemically treated dust cloth should also be avoided. Be sure that the dust cover is not exposed to insecticide spray.
- To remove stubborn finger prints or grease spots, detach the dust cover and disconnect the AC power plug.
  Use a soft cloth slightly moistened with a mild soap and water solution.
- Do not wipe the dust cover during play, or the tonearm may be attracted toward the dust cover due to the generation of static electricity.

❸ When you use other headshells, be careful about your choice. (See Fig. 16.)
When other types of headshells are employed, the handle portion of the headshell may strike against the inner, upper surface of the dust cover during automatic motion of the tonearm. In such case, we recommend the dust cover be left open during play.

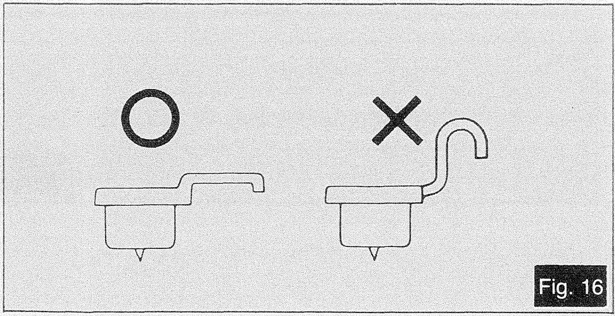

Fig. 16

❹ Before detaching or attaching the headshell, be sure to turn the power of the amplifier or receiver off.
Noise produced by detaching or attaching of the headshell, with the volume control turned up, may cause damage to the speakers.

❺ When finished play, be sure to secure the tonearm with the arm clamp.

❻ Wipe the headshell terminals from time to time. (See Fig. 17.)
Dust and dirt at the headshell terminals may result in increased "HUM" noise or intermittent sound. Use a soft dry cloth to clean the headshell terminals.

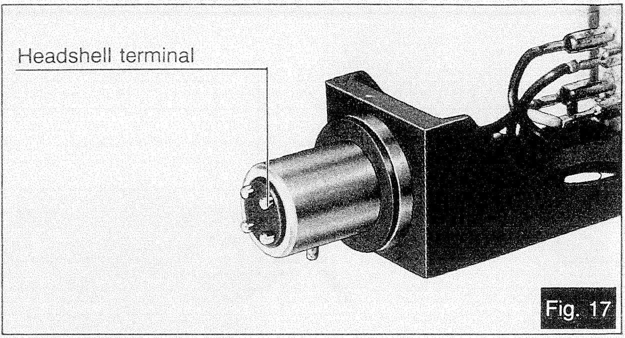

Fig. 17

❼ Dust and dirt should be carefully removed from stylus tip or records.

❽ Lubrication

- Apply two or three drops of oil to the motor shaft once every 2000 hours of operation.
- The time interval is much longer than that for conventional type motors (200–500 hours). **(See Fig. 18.)**
- Please purchase original oil. (Part number is **SFWO 010**.)

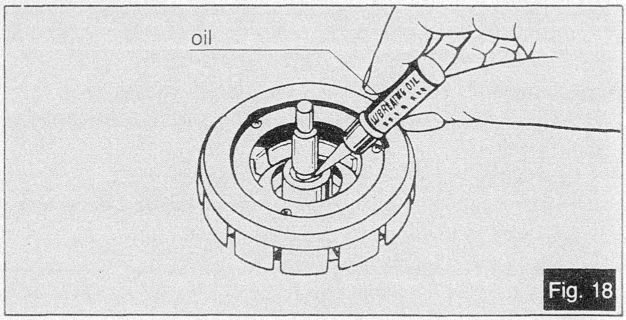

Fig. 18

❾ Replacement of the stylus. (See Fig. 19.)
Remove the headshell from the tubular arm by loosening the locking nut.

Note:
The stylus will give you many hours of listening pleasure.
To prevent damage to your records it should be replaced at the first sign of wear.
Noise or scratchiness may indicate a worn or damaged stylus.

1. Remove the headshell from the tubular arm by loosening the locking nut.
2. Carefully grasp the stylus assembly and raise its top portion as shown in the illustration "**A**", then pull it as "**B**".
3. Be careful not to touch the stylus tip, and install the new one in the reverse order like "**B**" to "**A**".

Replacement stylus is the EPS-74STED.
You can also use the ATN71E (audio-technica) replacement stylus.

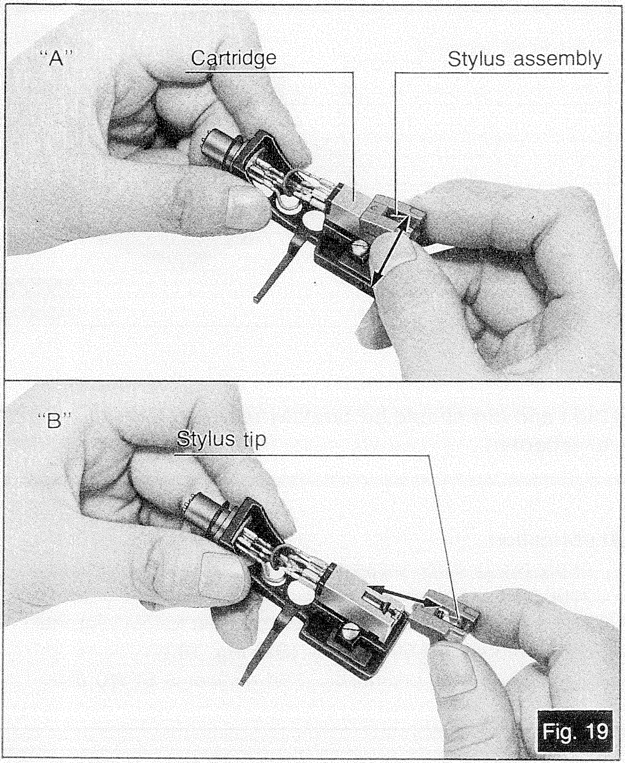
"A"
Cartridge
Stylus assembly
"B"
Stylus tip

Fig. 19

⑩ Replacement of the cartridge. (See Figs. 20 and 21.)

When you replace a cartridge, refer to the operation instructions of that cartridge.

1. Connect the lead wires to the cartridge terminals.
   The terminals of most cartridge are color coded. Connect each lead wire to the terminal of the same color.
   White (L+)→Left channel (+)
   Blue (L−)→Left channel (−)
   Red (R+)→Right channel (+)
   Green (R−)→Right channel (−)
2. Temporarily attach the cartridge to the headshell by using the included screws or the screws supplied with your cartridge.

Note:

To prevent damage to the delicate stylus tip during installation of cartridge and connection of lead wires remove the stylus from the cartridge temporarily or leave the stylus protection.

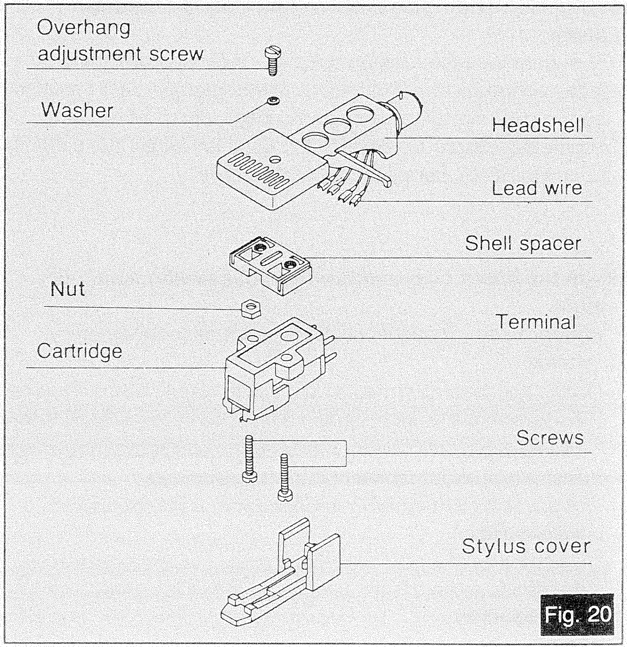
Overhang adjustment screw
Washer
Headshell
Lead wire
Shell spacer
Nut
Terminal
Cartridge
Screws
Stylus cover

Fig. 20

3. Loosen overhand adjustment screw and move the cartridge forward or backward until the distance between the stylus tip and the plug becomes 52 mm (2-3/64")
4. Tighten adjustment screw without moving the cartridge.

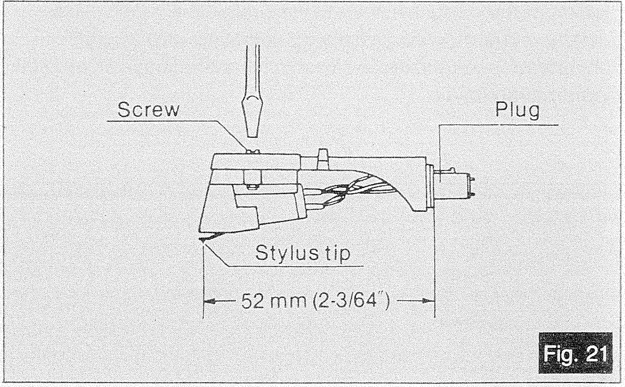
Screw
Plug
Stylus tip
52 mm (2-3/64")

Fig. 21

Adjustments

❶Adjustment of arm-lift height

- The arm-lift height (distance between the stylus tip and record surface when cueing lever is raised) has been adjusted at the factory before shipping to approximately 5 to 10 mm. **(See Figs. 22 and 23.)**

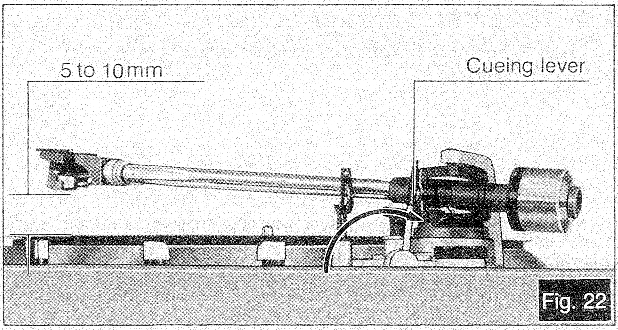

Fig. 22

- For using different cartridges available on the market or when further adjustments are particularly necessary, make adjustment as follows:

1. Put on the stylus protector to protect the stylus tip from damage.
2. Keep the power switch in the "OFF" position (■) to prevent the turntable platter from rotating.
3. Move the tonearm toward the centre spindle.
4. Turn the adjustment screw clockwise or counterclockwise, while pushing the arm lift down. **(See Fig. 23.)**
   Clockwise rotation
   —distance between the record and stylus tip is reduced.
   Counterclockwise rotation
   —distance between the record and stylus tip is increased.

Note:
As the adjusting screw has a hexagonal head, be sure to make the adjustment while depressing the arm lift.
And be sure that the hexagonal head retracts correctly into the arm lift when released.

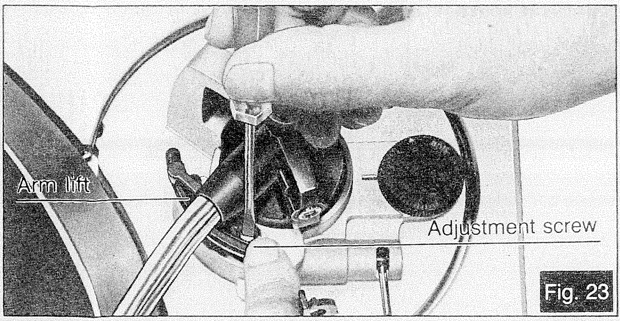

Fig. 23

❷Adjustment for automatic start position

(See Fig. 24.)
(Remove the rubber cap.)
In cases where the stylus tip sets down outside of the record
—**Rotate clockwise.**
in cases where the stylus tip sets down on the recorded groove
—**Rotate counterclockwise.**

❸Adjustment for automatic return position

(See Fig. 24.)
(Remove the turntable mat.)
In cases where the tonearm tends to return before the playing has finished.
—**Rotate clockwise.**
In cases where the tonearm fails to return after the last groove of the record.
—**Rotate counterclockwise.**

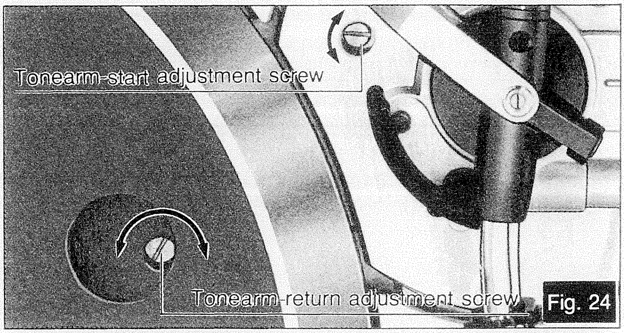
Tonearm-start adjustment screw
Tonearm-return adjustment screw

Fig. 24

Features

❶Three kinds of high-integration IC's.

In high-accuracy quartz control, advanced electronic circuit technique and IC formation technique are required. Technics employs kinds of high-density IC, i.e., IC for frequency divider (DN860) adopting I^2L and ECL, IC for phase and speed control (AN660), and IC for driving (AN640), and thus has produced a high-accuracy quartz-locked turntable with a less than ±0.002% speed drift. (In conditions for normal use in which the temperature is stable, the drift is only approximately ±0.00001%)

❷Double isolator with particular emphasis on prevention of acoustic feedback.

Rotational accuracy may be said to have reached the ultimate with the superior quartz control system. In order to maximize such high performance, the double isolator (double-isolated vibration-damping mechanism), unique in Technics, has been employed, while the turntable and tonearm are installed on a base weighted by the integrated construction of the main base and bottom cover, with the entire base floating in stable equilibrium with respect to the main turntable base through special isolators. Additionally, the main turntable base is also provided with an isolator superior in vibration damping characteristics. The combined effect obtained from the two kinds of isolators results in extremely superior vibration cut-off and absorption characteristics against external vibrations and local resonance from the direct sound pressure of the speakers, the floor etc. giving a marked improvement in prevention of howling.

❸Automatic turntable system equipped with "memo-repeat" function capable of repeatedly playing a record from one to six times or continuously playing a record repeatedly.

The unit is equipped with a convenient "memo-repeat" function, and you can enjoy manual playing; automatic start, automatic return, automatic stop, and in addition, repeatedly playing a record from one to six times or continuously playing a record repeatedly.

❹Highly sensitive gimbal suspension system.

With the high-precision pivot bearings employed for the horizontal and vertical journals of the tonearm, in concert with the adoption of the gimbal suspension system, a high-sensitivity arm of less than 7 mg friction has been attained, thus making it possible to fully realize the performance of high-compliance cartridges.

❺Motor construction unique to Technics, in which the motor rotor is integrally connected to the turntable platter.

The large, heavyweight class precision aluminum diecast finished turntable platter has the remarkable moment of inertia of 310 $kg \cdot cm^2$.

❻Precision aluminum diecase turntable base unique to Technics is used.

❼Superior load fluctuation characteristics.

By using the high-precision quartz phase-locked control system and high-torque motor, stable load-fluctuation characteristics are obtained, with no speed change, even at a stylus pressure of 180 g.

❽Smooth braking is achieved with the fully electronic system, which also makes possible almost instantaneous speed change.

Specifications

General

Power supply:	110–120/220–240 V, 50 or 60 Hz
Power consumption:	9.5 W
Dimensions: (W×H×D)	45.3×12.5×36.9 cm 17-12/16×4-15/16×14-9/16 (inches)
Weight:	9.3 kg (20.5 lb.)

Turntable section

Type:	Automatic turntable, Auto-start, Auto-return, Auto-stop. Memorepeat play and Manual play
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	Quartz-phase-locked control
Turntable platter:	Aluminum die-cast Diameter 33 cm (13 inches) Weight 2.2 kg (4.8 lb.) Moment of inertia 310 kg·cm^2 (106 lb·in^2)
Turntable speeds:	33⅓ rpm and 45 rpm
Starting torque:	1 kg·cm (0.9 lb·in)
Braking system:	Electronic
Speed change due to load torque:	0% within 0.9 kg·cm (0.8 lb·in)
Speed drift:	Within ±0.002%
Wow and flutter:	0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)
Rumble:	−73 dB (IEC 98A Weighted) −50 dB (IEC 98A Unweighted)

Tonearm section

Type:	Universal tonearm Gimbal suspension "S" shaped tubular arm Static balanced type
Effective length:	230 mm (9-1/16 inches)
Overhang:	15 mm
Tracking error angle:	+3°(at the outer groove of 30 cm (12") record) +1°(at the inner groove of 30 cm (12") record)
Offset angle:	21.5°
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	22 g (with 6 g cartridge weight, 1.75 g stylus pressure)
Stylus pressure adjustment range:	0–3 g
Applicable cartridge weight range:	5–11 g
Headshell weight:	9.5 g

Cartridge section

Type:	Moving magnetic stereo cartridge
Frequency response:	20 to 25,000 Hz
Output voltage:	2.5 mV 1 kHz, 5 cm/sec. zero to peak lateral velocity (3.5 mV 1 kHz, 5 cm/sec. zero to peak 45° velocity)
Channel separation:	22 dB at 1 kHz
Channel balance:	Within 2 dB at 1 kHz
Load impedance:	47 kΩ to 100 kΩ
Stylus pressure:	1.75±0.25 g
Replacement stylus:	EPS-74STED (ATN71E) (Elliptical stylus)

Weight and dimensions shown are approximate.
Specifications subject to change without notice.